with multiple dependent claims. Additionally, this Preliminary Amendment is entered to avoid the alternative language that is permitted in Europe.

The specification also has been amended to enter the section headings preferred by the United States Patent and Trademark Office and to remove the reference in the specification to specific claim numbers, as commonly employed in Europe. This Preliminary Amendment also is accompanied by a substitute application that enters the preceding changes and that also employs the paragraph numbering preferred by the United States Patent and Trademark Office. It is believed that these changes will facilitate the Examiner's review of the application.

Early and favorable action on the amended claims is solicited.

Respectfully submitted,

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"Version with markings to show changes made."

Page 1, delete the heading that precedes the first paragraph and insert the following two headings:

--BACKGROUND OF THE INVENTION

--Field of the Invention--.

Amend the first paragraph of the application to read as follows:

--The invention relates to a detector for detecting electrically neutral particles [in accordance with claim 1], to a converter device for a detector for detecting electrically neutral particles [in accordance with claim 11], to a method for producing a converter device [in accordance with claim 13] and to a detection method for detecting electrically neutral particles[in accordance with claim 14]--.

After the first full paragraph, insert the following new heading:

--Description of the Related Art--.

Delete the paragraph extending from page 5, line 24 through page 6 line 2 and insert the following new heading:

--SUMMARY OF THE INVENTION--.

Page 16, between lines 14 and 15, insert the heading:

--BRIEF DESCRIPTION OF THE DRAWINGS--.

Page 17, between lines 15 and 16, insert the heading:

--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMNETS--.

"Version with markings to show changes made."

--1. (amended) A detector for detecting electrically neutral particles, [in particular neutrons,] having

- a detector housing (10) which at least in certain regions is filled with a counting gas,

- at least one converter device (22) which is arranged in the detector housing (10) and generates conversion products as a result of the absorption of the neutral particles which are to be detected, the conversion products generating electrically charged particles in the counting gas,

- at least one readout device (19) for detecting the electrically charged particles,

- at least one device (18) for generating an electrical drift field for the electrically charged particles in at least a region of the volume of the counting gas in such a manner that at least some of the electrically charged particles drift toward the readout device (19), the converter device (22) being of charge-transparent design and being arranged in the detector housing (10) in such a manner that the drift field passes through at least part of this device.--

--2. (amended) The detector as claimed in claim 1, in which the converter device (22) has a multiplicity of passages (32), [which are preferably arranged randomly or in the form of a matrix,] for the electrically charged particles.--

--3. (amended) The detector as claimed in claim 2, in which the passages (32) have a minimum diameter of between 10 μm and 1000 μm, [preferably 25 μm to 500 μm,] and a minimum spacing of 10 μm to 500 μm[, preferably 50 μm to 300 μm].--

--4. (amended) The detector as claimed in [one of the preceding claims] claim 1, which comprises a multiplicity[, preferably from 2 to 20, most preferably 10,] of the converter devices (22) arranged in cascade form.--

--5. (amended) The detector as claimed in [one of the preceding claims] claim 1, in which a region of the converter device (22) which is active in the conversion is of large-area design and is [preferably] arranged substantially perpendicularly in the drift field.--

--6. (amended) The detector as claimed in [one of the preceding claims] claim 1, in which the device (18) for generating a drift field has a large-area[, optionally] structured drift electrode (18) [in order] to generate the drift field between the drift electrode and the readout device (19).--

--7. (amended) The detector as claimed in [one of the preceding claims] claim 1, in which the converter device (22) comprises a first conductive layer (28) and a second conductive layer (30), which are electrically insulated from one another by an insulator layer (26) arranged between them, and at least one converter layer (24), which is [preferably] arranged on at least one of the first conductive layer (28) and[/or on] the second conductive layer (30).--

--8. (amended) The detector as claimed in claim 7, in which the first conductive layer (28) and the second conductive layer (30) are electrically connected to a device for generating a converter field.--

--9. (amended) The detector as claimed in claim [7 or] 8, in which the converter layer (24) is a neutron converter layer which contains [in particular] at least one of lithium-6, boron-10, gadolinium-155, gadolinium-157 and[/or] uranium-235.--

--10. (amended) The detector as claimed in [claims 7 to] claim 9, in which the converter layer (24) has a layer thickness of from 0.1 μm to 10 μm[, preferably,] for a neutron converter layer substantially consisting of boron-10, between 0.5 μm and 3 μm, [most preferably approximately 1 μm,] the first and second conductive layers have a layer thickness of from 0.1 μm to 20 μm, [preferably 0.2 μm to 10 μm,] and the insulator layer has a layer thickness of from 10 μm to 500 μm[, preferably 25 μm to 100 μm].--

--11. (amended) A converter device (22) for a detector for detecting electrically neutral particles, [in particular neutrons,] having a first conductive layer (28) and a second conductive layer (30), which are electrically insulated from one another by an insulator layer (26) arranged between them, and at least one solid converter layer (24) which is [preferably] arranged on at least one of the first conductive layer (28) and[/or on] the second conductive layer (30), the converter device (22) having a multiplicity of passages (32)[, which are preferably arranged in the form of a matrix,] for electrically charged particles.--

--12. (amended) The converter device as claimed in claim 11, which contains a neutron converter material[, in particular] selected from the group consisting of lithium-6, boron-10, gadolinium-155, gadolinium-157 and[/or] uranium-235.--

--13. (amended) A method for producing a converter device (22) for a detector for detecting electrically neutral particles[, in particular neutrons,] comprising the following steps:

- providing an insulator layer (26) which is arranged between two electrically conductive layers (28, 30), so that the electrically conductive layers (28, 30) are electrically insulated from one another, and

- providing a converter layer (24)[, in particular a neutron converter layer].--

--14. (amended) A detection method for detecting electrically neutral particles[, in particular neutrons,] comprising the following steps:

- trapping the electrically neutral particles which are to be detected using at least one converter device (22) which generates conversion products when the neutral particles are absorbed;

- generating electrically charged particles in a counting gas by means of the conversion products;

- diverting the electrically charged particles in an electrical drift field to a readout device (19), at least some of the electrically charged particles being passed through the charge-transparent converter device (22)[, in particular] through a multiplicity of passages (32), which are [preferably] arranged in the form of a matrix, in the converter device (22); and

- detecting the electrically charged particles in the readout device (19).--